

What is claimed is:

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5 1. A solid state radiation detector comprising:  
a first electrode layer having permeability with respect to recording radiation, or light emitted by excitation of said radiation;

a recording photoconductive layer which exhibits electric conduction when irradiated with said recording radiation or said light;

10 a reading photoconductive layer which exhibits electric conduction when irradiated with reading light; and

a second electrode layer constructed of a large number of main line electrodes having permeability with respect to said reading light;

15 said first electrode layer, said recording photoconductive layer, said reading photoconductive layer, and said second electrode layer being stacked in the recited order;

20 a large number of secondary line electrodes, for outputting an electrical signal which has a level proportional to a quantity of latent image charge stored in a charge storage portion formed between said recording photoconductive layer and said reading photoconductive layer, being provided within said second electrode layer so that said main and secondary line electrodes are alternately arranged in parallel to one another;

25 wherein width  $W_b$  of said main line electrode, transmission factor  $P_b$  of said main line electrode with respect to said reading light, width  $W_c$  of said secondary line electrode,

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end

and transmission factor  $P_c$  of said secondary line electrode with respect to said reading light satisfy a condition equation of  $(W_b \times P_b)/(W_c \times P_c) \geq 1$ .

2. The solid state radiation detector as set forth  
5 in claim 1, wherein the width  $W_b$  of said main line electrode, the transmission factor  $P_b$  of said main line electrode with respect to said reading light, the width  $W_c$  of said secondary line electrode, and the transmission factor  $P_c$  of said secondary line electrode with respect to said reading light satisfy a condition equation of  $(W_b \times P_b)/(W_c \times P_c) \geq 5$ .

3. The solid state radiation detector as set forth  
in claim 1, wherein the material of said main line electrode is any one among indium tin oxide (ITO), Idemitsu indium X-metal oxide (IDIXO, produced by Idemitsu Kosan), aluminum, and  
15 molybdenum.

4. The solid state radiation detector as set forth  
in claim 2, wherein the material of said main line electrode is any one among indium tin oxide (ITO), Idemitsu indium X-metal oxide (IDIXO, produced by Idemitsu Kosan), aluminum, and  
20 molybdenum.

5. The solid state radiation detector as set forth  
in claim 1, wherein the material of said secondary line electrode is any one among aluminum, molybdenum, and chrome.

6. The solid state radiation detector as set forth  
25 in claim 2, wherein the material of said secondary line electrode is any one among aluminum, molybdenum, and chrome.

7. The solid state radiation detector as set forth in claim 3, wherein the material of said secondary line electrode is any one among aluminum, molybdenum, and chrome.

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